IO23352
-001

Fw: Bald Eagle death in Nebraska
Nicholas Mastrota to: Norman Spurling 10/20/2011 03:14 PM

Norman,

Please enter this new rodenticide wildlife kill into IDS. Thanks.

Nick
----- Forwarded by Nicholas Mastrota/DC/USEPA/US on 10/20/2011 03:14 PM -----

From: Nancy_Golden@fws.gov
To: Nicholas Mastrota/DC/USEPA/US@EPA
Cc: Scott_Larson@fws.gov
Date: 10/20/2011 02:07 PM
Subject: Fw: Bald Eagle death in Nebraska

Hi Nick,

Here's a new chlorophacinone incident for the database. As Scott mentions below, we don't have a final LE report yet, only the lab report. I hope it's not too late to include this in the white paper you're putting together for the Rodenticide SAP as I know there's a lot less data on chlorophacinone incidents than for some of the other rodenticides, so this seems like an important one.

If you have any questions, let me know, and copy Scott too as he's more likely to have answers.

Nancy

----- Forwarded by Nancy Golden/ARL/R9/FWS/DOI on 10/20/2011 01:12 PM -----

Scott Larson/R6/FWS/DOI
10/20/2011 12:58 PM

ToNancy Golden/ARL/R9/FWS/DOI@FWS

ccMike George/R6/FWS/DOI@FWS, Mike LeValley/R6/FWS/DOI@FWS, Pete Gober/R6/FWS/DOI@FWS, Matt Schwarz/R6/FWS/DOI@FWS, Sarena Selbo/R6/FWS/DOI@FWS, Henry Maddux/R6/FWS/DOI@FWS

SubjectFw: Bald Eagle death in Nebraska

Nancy,

We just received word of another bald eagle death attributed to chlorophacinone in Nebraska. The bird was picked up in March 2011

and the analysis was completed in August.

LE is still investigating but the lab report below can be shared with EPA for inclusion in the chlorophacinone incident reporting database. Nancy would you be able to provide this report to EPA? I anticipate when the investigation is completed we'll learn more and if I get a final report I'll share that as well.

Thank you
Scott Larson
Field Supervisor
U.S. Fish and Wildlife Service
Suite 400
420 South Garfield Ave.
Pierre, South Dakota 57501

Phone: 605-224-8693 x 224
Fax: 605-224-9974
Email: scott_larson@fws.gov

----- Forwarded by Scott Larson/R6/FWS/DOI on 10/20/2011 11:47 AM -----

Mike Damico/R6/FWS/DOI

10/20/2011 11:29 AM

To Scott Larson/R6/FWS/DOI@FWS

cc

Subject Lab Report @ chlorophacinone

Scott,
Here is the Lab report about the eagle killed by Chlorophacinone.
Mike

(See attached file: BUFFALO COUNTY BALD EAGLE R3 Attachment.pdf) BUFFALO COUNTY BALD EAGLE R3 Attachment.pdf

IN REPLY REFER TO:

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Office of Law Enforcement
Clark R. Bavin
National Fish and Wildlife Forensics Laboratory
1490 East Main Street
Ashland, Oregon 97520

August 26, 2011

VETERINARY PATHOLOGY EXAMINATION
FINAL REPORT

Lab Case #: 11-000105
Agency Case #: 2011601819
Pathologist: Tabitha C. Viner

Case Title: Buffalo County Bald Eagle

Submitting Agency:
USFWS/LE, North Platte
PO Box 1086
North Platte, NE 69103
Submitting Agent: Mike Damico
Suspect(s):

EVIDENCE RECEIVED

The following evidence was received in the Evidence Unit of the Laboratory on March 31, 2011, and was transferred to the undersigned examiner on August 03, 2011:

LAB-1: "One Bald Eagle carcass - ST#883192" [ST#883192; Item#1]

HISTORY

None

EXAMINATION/S CONDUCTED

LAB-1: The carcass was radiographed (x-rayed), dissected, and examined visually (necropsy examination) for gross pathological lesions. Photographs were taken to document any significant gross pathological findings.

LAB-1 was itemized and the following sub-items were generated:
LAB-1A Formalin-fixed tissues from LAB-1 (not analyzed)
LAB-1B Liver from LAB-1

LAB-1B was assigned to Andreas Lehner, Analytical Chemist – Michigan State University Diagnostic Center for Population and Animal Health (see DCPAH Report of Laboratory Examination dated 8/24/2011).

CASE SUMMARY

It is my opinion that his bald eagle died due to ingestion of the anticoagulant chlorphacinone, which was detected in significant amounts in the liver (see DCPAH Report of Lehner dated 8/24/2011). The combination of these test results and the presence of hemorrhage into the subcutaneous tissues, body cavities, and lungs supports this diagnosis. No gut contents were available for examination, but toxicity was likely incurred through ingestion of one or more poisoned rodents. A healed ventricular scar and coelomic granulomas may have been related, but appeared to be clinically irrelevant at the time of death. Similarly, ventricular nematodes were an incidental finding.

EVIDENCE DETAILS -- LAB- 1:

Common name:	Bald Eagle	**Weight:**	6.4 kg
Scientific name:	*Haliaeetus leucocephalus*	**Carcass composition:**	Intact carcass
Sex:	Female	**Nutritional condition:**	Good
Lifestage:	Adult	**Post mortem preservation:**	Good
Date(s) examined:	8 August 2011		

POST MORTEM FINDINGS

RADIOGRAPHIC EXAMINATION: Two facing views and one lateral view are available for examination. The wings are folded to the body and the head is cocked to one side (sides not specified on radiographs). Two thin, metal, twisted pieces of wire and a metal grommet are associated with the packaging at the ventrum of the bird. No other metal-density objects are noted. The cranial lung fields and air sacs the slightly hazy, but the caudal air sacs are clear. No bony fractures are noted.

EXTERNAL EXAMINATION: The corneas are bilaterally sunken in the eyes and masses of fly eggs are present over the cornea of the right eye. The left eye is overlain by a dried leaf. There are numerous fly larvae that are up to 4 mm long within the oral cavity, along with small amounts of blood and fly eggs. The tongue is dark brown and desiccated. The skin of the feet is pale, dry, and, on the plantar surface, slightly hyperkeratotic. Blood exudes from the oral cavity on manipulation of the body.

EVIDENCE OF INJURY: Beginning at the third cervical vertebra and extending to the cervicothoracic junction on the right side of the neck there is a 2 cm wide band of subcutaneous and muscular hemorrhage. Beginning at the caudal edge of the left side of the rib cage and extending 5 cm caudally, there is a 4 cm wide band of hemorrhage underneath the muscular body wall and into the coelomic adipose tissue. Approximately 10 mL of hemorrhage extends into the underlying air sac and around the ventriculus. Hemorrhage intercalates between lobules of the adipose tissue and the pancreas, and underneath the serosa of the proventriculus and ventriculus. Subjacent to the proventricular-ventricular junction, on the left of the ventriculus adjacent to the hemorrhage, there is a 13 mm diameter pale, serosal scar with stellate streaks radiating from it. On the mucosal surface opposite the scar, the wall of the ventriculus is thin but is otherwise unaffected.

INTERNAL EXAMINATION: There are abundant subcutaneous and body cavity fat stores and the pectoral musculature is well-developed. Within the ventriculus are up to five nematodes that are less than 1 mm in diameter and up to 25 mm long. Other than these the ventriculus is essentially empty. The proximal small intestinal tract contains a moderate to small amount of gray-green, mucoid digesta which

progresses to scant amounts of digesta in the distal small intestinal tract and colon. The liver and kidneys exhibit moderate pallor. Ovarian follicles are up to 5 mm in diameter. The left thyroid gland is 25 x 18 x 14 mm and the right is approximately 14 mm in diameter. Within the right cranial air sac there is a 26 x 10 x 7 mm, irregular, firm structure that, in cross-section is composed of a membrane around a granuloma containing granular, brown, friable material. The esophageal mucosa is coated in a film of blood. The crop is empty. There are 20 to 30 fly larvae within the trachea that are up to 8 mm long. Approximately 90% of the lung parenchyma is dark red and hemorrhagic, and representative sections sink in water. Relatively normal pulmonary parenchyma is present at the craniodorsal extent of both lungs. The heart chambers are nearly devoid of blood. The gall bladder contains approximately 2 mL of normal-appearing bile. The following tissues are within normal limits: adrenal glands, oviduct, heart, and spleen. The brain is not examined.

SUMMARY OF GROSS FINDINGS

Hemorrhage around pancreas and ventriculus
Subcutaneous/muscular hemorrhage on neck
Lung congestion and hemorrhage
Enlarged thyroid glands
Tissue pallor
Healed scar in ventricular wall
Ventricular nematodiasis
Coelomic granulomas

PROXIMATE CAUSE OF DEATH

POISONING-ANTICOAGULANT CHLORPHACINONE

DISPOSITION OF EVIDENCE:

All evidence item(s) were transferred to the Evidence Unit pending return to the submitting agency.

Tabitha C. Viner, DVM DACVP
Supervisory Veterinary Pathologist

26 Aug 2011
Date

MICHIGAN STATE UNIVERSITY

DCPAH
Diagnostic Center for Population & Animal Health

Director: Dr. Carole Bolin
4125 Beaumont Road
Lansing, MI 48910-8104
Phone: 517-353-1683
Fax: 517-353-5096
www.animalhealth.msu.edu

REPORT OF LABORATORY EXAMINATION

Client:
National Fish & Wildlife (81501)
Forensic Lab
1490 East Main Street
Ashland, OR 97520

Owner:
National Fish and Wildlife, Forensics Lab

Rcvd Date:	8/18/2011 2:29:00 PM	Animal:	110105LAB1	MRN:	11000105
Admitted By:	Viner, Dr.	Species:	Avian	Breed:	Bald Eagle
Ordered By:	N/A	Age:	Unknown	Gender:	Female
Encounter:	01229106	Tag/Reg ID:			
CR#:	AP	Other ID:			

Toxicology

General Toxicology

Collected Date/Time (If Provided)	08/08/2011 14:31:00		
Procedure		Ref Range	Units
Anticoagulants Specimen	Liver		
Brodifacoum	<0.002		ppm
Bromadiolone	<0.02		ppm
Chlorphacinone	0.4		ppm
Coumachlor	<0.02		ppm
Coumafuryl	<1.0		ppm
Coumatetralyl	<0.02		ppm
Difenacoum	<0.02		ppm
Difethialone	<0.07		ppm
Diphacinone	<0.2		ppm
Warfarin	<0.02		ppm
Anticoagulants Interpretation	See Below		

L = Low Result; H = High Result; @ = Critical Result; ^ = Corrected Result; * = Interpretive Data; # = Result Footnote

Admitted By:	Viner, Dr.	Species:	Avian	MRN:	11000105
Encounter:	01229106	Animal:	110105LAB1	Owner:	National Fish and Wildlife, Forensics Lab

Toxicology

General Toxicology

08/08/2011 14:31:00 Anticoagulants Interpretation

The sample was positive for chlorphacinone at 0.4 ppm. Chlorphacinone oral LD50 values from the EPA Actor web site: mouse, 1.06 mg/kg; deer mouse, 0.05 mg/kg; rat (white), 2.1 mg/kg; rat (albino), 20.5 - 50 mg/kg; rabbit, 50 - 200 mg/kg; duck including mallard, 100 mg/kg; red-neck pheasant, 100 mg/kg; red-wing black birds, 430 mg/kg. In general, rodents appear to be more sensitive than other mammals or avian species. For example, toxicity in dogs generally falls in the range 50 - 100 mg/kg (Osweiler, et al., 1985). Comparably, doses in the range 30-50 mg/kg were 100% lethal to rabbits and piglets (Bolokhovets, 1977); note that pigs are considered more sensitive than cats or dogs. An early study on chlorphacinone concluded "Feeding caged pheasants, partridges, pigeons, mallard ducks, and rooks with wheat grain spiked with 20 kg/ha of grain contg. 0.005% chlorphacinone [50 ppm] caused no lethal poisoning, which permits using [it] as a rodenticidal seed dressing." (Kulczycki, et al 1985). In contrast, studies in quails show that toxicity can occur in avian species when fed in the range of 50-60 mg/kg feed, lethal concentration. A subchronic study resulted in a "no-observed-effect-level" of 1 mg chlorphacinone/kg feed (Riedel, et al, Archiv fuer experimentelle Veterinarmedizin (1990), 44(3), 341-6).

Please be advised that the DCPAH Toxicology Section disposes of all samples 12 months from the date of receipt.

Andreas Lehner, Ph.D.
Analytical Chemist
8/24/2011 4:23 PM

Revised Canine Thyroid Reference Ranges

Canine thyroid reference ranges have been revised effective 8/1/11. Please refer to www.animalhealth.msu.edu for additional information.